# Index

## Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd sector</td>
<td>64, 69-70, 75</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td></td>
</tr>
<tr>
<td>above ground biomass</td>
<td>82-83</td>
</tr>
<tr>
<td>accepted returns</td>
<td>165, 168-169, 172</td>
</tr>
<tr>
<td>air management</td>
<td>216</td>
</tr>
<tr>
<td>air-side economizers</td>
<td>216</td>
</tr>
<tr>
<td>allometric method</td>
<td>82, 87</td>
</tr>
<tr>
<td>alternative energy</td>
<td>80, 82, 98, 100</td>
</tr>
<tr>
<td>Australian Mobile Telecommunications Association (AMTA)</td>
<td>159, 178-179, 182, 184</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td></td>
</tr>
<tr>
<td>banking and pooling</td>
<td>34-36, 47</td>
</tr>
<tr>
<td>base scenario</td>
<td>171-172</td>
</tr>
<tr>
<td>below ground biomass</td>
<td>83</td>
</tr>
<tr>
<td>bike system design</td>
<td>190, 199</td>
</tr>
<tr>
<td>bike terminals</td>
<td>187, 191-194, 196, 198-199, 201</td>
</tr>
<tr>
<td>biofuel</td>
<td>5, 7, 113, 120, 124</td>
</tr>
<tr>
<td>biomass</td>
<td>5, 82-83, 86-87, 90, 113, 129, 131</td>
</tr>
<tr>
<td>Blade servers</td>
<td>211, 213, 217</td>
</tr>
<tr>
<td>business intelligence</td>
<td>184, 208</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td></td>
</tr>
<tr>
<td>California Fuel Cell Partnership (CaFCP)</td>
<td>93, 99-103, 105, 110</td>
</tr>
<tr>
<td>capital expenditure (CAPEX)</td>
<td>207</td>
</tr>
<tr>
<td>carbon credit</td>
<td>16, 82-83, 87, 152-154</td>
</tr>
<tr>
<td>carbon data</td>
<td>83, 87</td>
</tr>
<tr>
<td>carbon emission compliance</td>
<td>80</td>
</tr>
<tr>
<td>carbon incentive</td>
<td>81-82, 90</td>
</tr>
<tr>
<td>Carbon intensity</td>
<td>80</td>
</tr>
<tr>
<td>carbon markets</td>
<td>3, 9-11, 15</td>
</tr>
<tr>
<td>carbon trading</td>
<td>132, 134, 151-154</td>
</tr>
<tr>
<td>casino banking</td>
<td>64, 67</td>
</tr>
<tr>
<td>Centre for the Study of Financial Innovation</td>
<td>67, 77-78</td>
</tr>
<tr>
<td>CER price estimation</td>
<td>25</td>
</tr>
<tr>
<td>Certified Emission Reductions (CERs)</td>
<td>6, 16-17, 20-25, 27</td>
</tr>
<tr>
<td>Chicago Climate Exchange (CCX)</td>
<td>152</td>
</tr>
<tr>
<td>Clean Development Mechanism (CDM)</td>
<td>2, 4-7, 9, 16, 54, 63, 80-81, 87, 130, 152</td>
</tr>
<tr>
<td>closed loop supply chains (CLSCs)</td>
<td>157-160, 162, 166, 172, 174-177, 181-183, 185-186</td>
</tr>
<tr>
<td>Collaborative Planning and Forecasting and Replenishment (CPFR)</td>
<td>149, 155</td>
</tr>
<tr>
<td>complementary currencies</td>
<td>64-65, 70, 75-77</td>
</tr>
<tr>
<td>Computer Room Air Conditioner (CRAC)</td>
<td>215, 227</td>
</tr>
<tr>
<td>Consultative Group on International Energy Research (CGIER)</td>
<td>7</td>
</tr>
<tr>
<td>cooling tower</td>
<td>227</td>
</tr>
<tr>
<td>Corporate Average Data Center Efficiency (CADE)</td>
<td>221</td>
</tr>
<tr>
<td>cost model</td>
<td>217, 227</td>
</tr>
<tr>
<td>credit risk</td>
<td>140, 142, 145-147, 151, 153</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td></td>
</tr>
<tr>
<td>Data Center Energy Productivity (DCEp)</td>
<td>221</td>
</tr>
<tr>
<td>data center industry</td>
<td>202-203, 206, 217, 219-220, 222, 224</td>
</tr>
<tr>
<td>Data Center IT Utilization (DCIU)</td>
<td>220-221</td>
</tr>
<tr>
<td>data center metrics</td>
<td>220-221, 224</td>
</tr>
<tr>
<td>Data Center Performance per Watt (DCPpW)</td>
<td>221</td>
</tr>
<tr>
<td>datacenters</td>
<td>202-205, 210-215, 221, 226-227</td>
</tr>
<tr>
<td>data-deduplication</td>
<td>213</td>
</tr>
<tr>
<td>decarbonisation</td>
<td>35</td>
</tr>
<tr>
<td>deforestation</td>
<td>9, 52, 79-83, 90-91</td>
</tr>
<tr>
<td>demand management</td>
<td>140</td>
</tr>
<tr>
<td>Department of Energy (DOE)</td>
<td>27, 101, 103, 105-106, 110-111, 113, 120, 209, 220</td>
</tr>
</tbody>
</table>
Index

Desktop Virtualization  205
Development Finance Institutions (DFIs)  3, 8
direct liquid cooling  215
direct structure tests  171
distancing of the customer  66
documentary risk  140, 142
double conversion on-line  219-220
dual currency system  70

E
econometric method  82
economic circle  67
EcoSecurities (ECO)  15-27, 29
efficient technology  80, 208
electronic money  69, 71
ergy-mix strategies  58
environmental legislation  159
Environmental Protection Agency (EPA)  16-17, 27-
EU Emissions Trading Scheme (EU ETS)  34-37,
46-49
European Commission (EC)  35-37, 47, 49, 71, 160,
183
European Union Allowances (EUAs)  45-46
Export Credit Agencies (ECA)  13, 146
extended producer responsibility (EPR)  160

F
facility design  187, 190
failed returns  165, 168-169
Failure Mode Analysis  180
fast-used products  173, 175, 177-178
Financial Constraints  112, 114-115, 117-122, 129
financial distress costs (FDC)  118
Financial Services Association (FSA)  71
FOVOC  17, 20-25
Free Cooling  216
fuel cell vehicles (FCVs)  93, 97-103, 105-110

G
gasifier-based energy  121
green credit  71
GHG concentrations  1, 4
Green Bike Transportation  187, 201
green dollars  71
Greenhouse Gasses (GHGs)  1-7, 9, 11-12, 15-16,
80, 93, 97-99, 103, 108-109, 151-153
gross domestic product (GDP)  69-70, 80, 133, 160
Guest Operating Systems  213

H
Health Insurance Portability and Accountability Act
(HIPAA)  208
Heating, Ventilating and Air-Conditioning (HVAC)
216, 220
hierarchy of inferiority  57, 60
Hot Aisle/Cold Aisle  215, 228
Household Data  83
Humana People to People (HPTP)  56-57, 60-61
dissociated hydrogen fuel cell vehicles (HFCVs)  92-93, 105-
106, 108, 110

I
IBM Dollar  67, 77
ICBA  66
inappropriate exchanges  74
information management  140, 151
Infrastructure Development Company  55-56, 58, 62
Initial Rate of Return (IRR)  4, 20
inside cheating risk  140
inspection time  165, 169, 172
interlocking services  66
International Energy Agency (IEA)  1-4, 13, 27, 54,
62, 110
inventory cost  140, 142, 151, 172-178, 181
inventory risk  140
investment in low-carbon technologies  7
investment timing analysis  25
involuntary market  152-153

J
Just in Time (JIT) supply  149

K
Kafle Community Forest (KCF)  79, 83-88, 90-91
Kafle community forest user group (KCFUG)  84,
91
Kyoto protocol  2, 6, 15-17, 24, 49, 54, 152-153,
155

L
Lighting Africa  51
Local Exchange and Transfer Schemes (LETS)  64-
65, 70-73, 75
low carbon growth model  1
low-carbon hydrogen economy  92-94, 97-98, 102,
104, 106, 108-109
loyalty vouchers  68
Index

M
mainframe servers 212
marginal cost of capital (MCC) 112, 114, 118-122, 131
marginal rate of return (MRR) 118, 122-123, 131
market allocation system 68
market fluctuation risk 140
mathematical optimization 193, 201
mechanisms for mitigation 4
Metro Vancouver 191
Microsoft points 68-69
million gallons per year (MGY) 113
model building 162
mono-system 67
multi-core servers 208
Multilateral Development Banks (MDBs) 7-8
mutual credit system 71

N
National Allocation Plan (NAP) 35
Nationally Appropriate Mitigation Actions (NAMAs) 3
net present value (NPV) 15, 22-27, 117-118, 123
network attached storage (NAS) 214
New Economics Foundation (NEF) 70
New Energy Finance (NEF) 10, 119
non-banks 65-66, 76-77

O
Octopus cards 67
OECD 2, 11, 13, 146
Official Development Assistance (ODA) 1, 4, 6-8
on demand computing 208
operational hedging 112, 114-115, 121-123, 125-128, 131
operational sustainability 206, 226
operation risk 140, 146, 152
Operations and Maintenance expenditure (OPEX) 207
Oyster card system 67

P
percentage disposed 165, 169, 173
Performance Optimized Data Center (POD) 212-213, 221
photovoltaic (PV) technology 7, 55
physical footprint 205
power distribution unit (PDU) 209, 218-219, 228
power usage efficiency (PUE) 215, 221
product management 140, 142-143
profitability index (PI) 24, 27
public bike sharing 198
Public Finance Mechanisms (PFMs) 3, 8, 13-14
public transportation 12, 187, 189, 199-201
Purchasing Power Parity (PPP) 147, 155
purchasing reward schemes 66
R
Rack-Mount Power Distribution Unit (rPDU) 228
real economic well-being 70
recoverable inventory 162-163, 165-166, 169, 172-178, 181-182
reduction of emission from deforestation and forest degradation (REDD) 9-10, 79-84, 87-91
regional corporation 67
relationship-specific investments 67
remanufacturable items 165
renewable innovations 54
Renewable Portfolio Standard (RPS) 11
renewables obligation (RO) 11
rental bike systems 190
replenishment frequency 166, 169, 172
repository document risk 140
residence time (RT) 163, 166, 169-179, 181-182
retail banking 66-67, 75
retail sector 66-67
return on investment (ROI) 5, 112, 114, 118, 204
Reuters Carbon Market Database 36, 46, 49
reverse logistics 157-161, 167, 175, 178-179, 182-186
Rotary UPS 220
S
Second Life 69
Server System Infrastructure (SSI) 219
Server Virtualization 205, 211, 213
serviceable inventory 162, 165-166, 169, 172-173
Service Agreement with Customer (SAWC) 163, 166-168, 170-171, 173-178, 180
service credits 71
signature analysis 180
slow-used products 173-175, 177
small and medium-sized enterprises (SME) 132-136, 138-148, 150, 154-155
Software as a Service (SaaS) 222-223
solar mirrors 54
Stock and Flow Diagram (SFD) 164-165, 168
storage area network (SAN) 99, 213-214
Index

Storage consolidation 205
strategic sustainability 157
sunk cost 59
Supply-Chain Council (SCC) 136
Supply-Chain Operations Reference-model (SCOR) 132, 134, 136-139, 149, 154
supply management 140
sustainable cities 11
sustainable development 2, 5, 51-52, 78, 205
system dynamics (SD) 157, 159, 164, 168, 170-171, 181-186

T

Technological Environmental Innovation (TEI) 92
technology policy 129
technology roadmap 202, 206, 221, 224
Tecterra 17-18, 20, 22-28
telecommuting 205
terminal locations 192-198
The Energy and Resource Institute (TERI) 55-56
The Other Economic Summit (TOES) 70
thermal management 214-216
Third Party Logistics (3PL) 132-137, 139, 142-145, 149-151
tie-in customers 66
Tier4 Data Center 211
timebank systems 64-65, 70, 73-76
time dollars 71
token-coint systems 68
token exchange system 68
Total Cost of Ownership (TCO) 204, 208
traditional banking sector 65, 69
transition management (TM) 92-97, 102, 104, 108-111
triple bottom line 65, 70

U

UNFCCC 5-6, 8, 80, 87, 91
uninterruptible power supplies (UPS) 205, 218-220, 227-228
United Nations Environment Protramme (UNEP) 2-3, 5-6, 10, 13-14

V

vendor managed inventory (VMI) 148
Ventilation Air Methane (VAM) 16-18, 20, 22-24, 26-27
venture capital (VC) 5, 118-119, 124, 130
voluntary market 22, 152-153

W

water-side economizer 216
Wir 67
World Bank 2-3, 5-6, 8, 14, 27, 50-57, 60-63, 85, 87, 130, 152-153, 188